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FISHES FROM EASTERN CANADA.

BY HENRY W. FOWLER.

Within the past few years the Academy has received several collections from different localities in the eastern and maritime provinces of the Dominion. They have been submitted to me for study, and as several interesting or new records were found among them, this paper is offered as a slight contribution to science. Acknowledgment is here expressed to those who made the collections, and also for such field notes as are appended.

LAKE CASSETTE.

This is one of the Rimouski series of lakes in Rimouski County, Province of Quebec. Another connected lake is Long Lake, in the same region. From these waters a number of fresh chars were obtained by Mr. J. E. V. Titus, in September of 1911 and 1912.

***Salvelinus fontinalis* (Mitchill).**

Two rather well-marked varieties occur, which were thought to be distinct by the fishermen, distinguished locally as the "brook trout" and the "gray back."

The first of these is of variable color, from very dark to quite light or tan, or even pale brown. Dark examples are quite olivaceous. Red on lower sides ordinarily of deep crimson. In weight they range from one-half to six pounds and four ounces. They are said to spawn in late October, or from late September till late October. In Touradiff Lake examples occur all quite black on the back, in fact dusky-olive, and with the red of the lower sides swarthy. Possibly this is due to the numerous submerged conifers, besides other timber in the lake, which renders the water and the fish dark.

The gray-back is distinguished by the alleged variety of its steel-gray color, the blotches and markings appearing very distinct. It does not show red on its lower sides. The old females are known as "bull-dogs," on account of their snub-noses. It reaches a length of eight to eighteen inches, a weight of about three and one-half pounds, and spawns later than the ordinary trout, or in October and November.

Three examples before me from Lake Cassette do not indicate these variations to be other than local or individual.

Salvelinus alpinus marstoni (Garman).

Head 4 to $4\frac{3}{4}$; depth $4\frac{1}{2}$ to 6; D. usually iv, 9, 1, rarely iv, 10, 1 or iv, 8, 1; A. usually iv, 8, 1, sometimes iv, 9, 1; scales in lateral line with tubes about 106 to 123 to caudal base, and 3 to 10 more on latter, the average about 7; 150 to 187 scales counted just above l. l. its entire course to caudal base, and 5 to 12 more on latter; 32 to 34 scales above l. l. to dorsal origin; 30 to 34 scales below l. l. to ventral origin; 68 to 73 predorsal scales; snout $3\frac{3}{7}$ to $3\frac{3}{4}$ in head, measured from upper jaw tip; eye 6 to $7\frac{1}{5}$; maxillary $1\frac{9}{10}$ to $2\frac{1}{8}$; interorbital $3\frac{1}{8}$ to $3\frac{1}{2}$; gill-rakers of left side usually 8, seldom 7 + 12, of right side usually 8, seldom 9 + 12, rarely 13; total length $12\frac{5}{8}$ to $14\frac{3}{4}$ inches, of seven examples.

Color when fresh, back deep olive to dusky, the latter shade mostly over median line and color becoming more rich olive as it descends the sides. Sides, in region of lateral line, marked by well-spaced small red spots ocellated with very pale blue, though these last only present when fish is taken from the water. Head dusky to olive above, sides same, and lower surface whitish, with smutty tinge over branchiostegals. Iris brownish or dusky, with narrow circle of golden about dark pupil. Inside gill-openings pale. Dorsal and caudal dusky-olive, with dusky shades on membranes of former. Pectoral with whitish upper edge, on outer surface grayish medianly above and lower surface orange-red, and on inner surface dark upper median tint dusky-olive. Ventral orange-red, front and hind edges whitish. Anal with front edge whitish, broad distal edge pale orange and base pale dusky. Breast, belly, abdomen, and most all of ventral region orange-red, though much paler posteriorly.

When first studied I was inclined to consider these specimens as a new form of char allied to the *Salmo marstoni* Garman. The points of difference according to the original description are the very small scales, about 230 in the series immediately above the lateral line, and more than 250 in a row 5 or 6 scales above this. The eye is given as less than 5 in the head, the maxillary extending backward almost as far as hinder edge of eye, and the gill-rakers 8 + 14. From the above it is therefore quite likely these characters are really individual variations. The spots of red along the lateral line are imperfectly made out and their colors not sufficiently detailed in the original description of *Salmo marstoni* Garman.¹ Under the

¹ *Science*, July 14, 1893, p. 23. Lac de Marbre, Ottawa County, Quebec.

vernaculars "Marston trout" and "Red Canadian trout," and listed as *Salvelinus marstoni*, Evermann and Goldsborough give² a list of localities for the Quebec and Ottawa provinces, including Lake Cassette among their records.

According to Mr. Titus, the present form is known as the "Golden trout" or "Poisson d'Oro," from its coloration. The males always exhibit orange-red sides and the female appears to have a more yellowish tinge. The largest examples were about $1\frac{1}{2}$ pounds in weight, and the dimensions of the largest noted above. They spawn in late November and during December, in this locality. All the trout of these lakes were spawning on the same grounds. They do not appear to be common, and are taken in proportion of one to every 150 or 200 brook trout.

NOVA SCOTIA.

During the summer of 1911 Dr. D. G. Metheny made a collection of marine fishes at Cranberry Head. He also made a similar collection during the summer of 1912 at the same place:—

Squalus acanthias Linnæus.

Raja ocellata Mitchill.

Clupea harengus Linnæus.

Pomolobus pseudoharengus (Wilson).

Scomber scombrus Linnæus.

Thunnus thynnus (Linnæus).

A large one taken in 1912.

Poronotus triacanthus (Peck).

Tautoga onitis (Linnæus).

Myoxocephalus octodecimspinosus (Mitchill).

Hemitripterus americanus (Gmelin).

Cyclopterus lumpus Linnæus.

Lophopsetta maculata (Mitchill).

Limanda ferruginea (Storer).

Pseudopleuronectes americanus (Walbaum).

Pollachius virens (Linnæus).

Microgadus tomcod (Walbaum).

Gadus callarias Linnæus.

Merluccius bilinearis (Mitchill).

PRINCE EDWARD ISLAND.

Several collections were made on this island, comprising fresh-water species, in July and August of 1912, by Mr. Bayard Long.

² *Proc. Biol. Soc. Washington*, XX, December 31, 1907, p. 104.

Besides the fishes, several amphibians were also secured. These are: *Bufo americanus* from Black Pond, Charlottetown, and East Lake near Bothwell; *Rana septentrionalis* from Black Pond, between Southport and Lake Verde, Tignish, and from large swamp in Dundee; and *Rana sylvatica* from near Charlottetown.

Salvelinus fontinalis (Mitchill).

Young from near Southport and near Village Green.

Anguilla rostrata (Le Sueur).

North Lake.

Fundulus heteroclitus badius Garman.

Tignish, North Lake, East Lake near Bothwell, Grand Tracadie, Black Pond and Fullerton Marsh at Bunbury.

Pygosteus pungitius (Linnæus).

Abundant in spring-brook at Charlottetown and spring-head of Hillsboro River at Southport.

Gasterosteus aculeatus Linnæus.

Common with *Pygosteus* at Charlottetown and Southport; Bloomfield; swamp at Dundee.

Apeltes quadracus (Mitchill).

East Lake near Bothwell.

MACDALEN ISLANDS.

Mr. Long also made a small collection of fresh-water fishes here in July and August of 1912.

Fundulus heteroclitus badius Garman.

Adult and young at Grindstone.

Pygosteus pungitius (Linnæus).

Many adults and half-grown from Grindstone and Allright Island.

Gasterosteus aculeatus Linnæus.

Abundant at Grindstone and Etang du Nord.

Apeltes quadracus (Mitchill).

One at Grindstone and four adults at Etang du Nord. This is the most northern locality at which I am able to find the species known to occur.

SPARROW LAKE, ONTARIO.

A small collection was made at this locality in Simcoe County in the summer of 1904, and forwarded to the Academy by Mr. W. S. Ray:—

Pimephales notatus (Rafinesque).

Notropis hudsonius selene (Jordan).

Esox vermiculatus Valenciennes.

Percopsis omiscomaycus (Walbaum).

Eupomotis gibbosus (Linnæus).

Micropterus dolomieu Lacépède.

Perca flavescens (Mitchill).

Percina caprodes zebra (Agassiz).

MATTAWA, ONTARIO.

Mr. Horace H. Burton made a small collection at this locality and northward along the Ottawa River to Lake Temiskaming, in October of 1913. Excepting the trout and *Rana septentrionalis*, which were obtained in Lake Temiskaming, all the others were taken in the Ottawa River at Mattawa. Besides the following fishes Mr. Burton also secured examples of *Cambarus bartoni*, *Necturus maculosus*, *Diadophis punctatus* and *Thamnophis sirtalis*.

Salvelinus fontinalis (Mitchill).

Several small ones.

Semotilus bullaris (Rafinesque).

One young example.

Catostomus commersonnii (Lacépède).

Small one.

Boleosoma nigrum (Rafinesque).

Many examples, though all small.